Lot # XXXXX

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MATERIAL DATA SHEET

Ubiquitin-Rhodamine 110 (R110), *human recombinant*
Cat. # U-555

Ubiquitin is a 76 amino acid (aa) protein that is ubiquitously expressed in all eukaryotic organisms. Ubiquitin is highly conserved with 96% aa sequence identity shared between human and yeast. In mammals, four ubiquitin genes encode for two ubiquitin-ribosomal fusion proteins and two polyubiquitin proteins. Cleavage of the ubiquitin precursors by deubiquitinating enzymes gives rise to identical ubiquitin monomers each with a predicted molecular weight of 8.6 kDa. Conjugation of ubiquitin to target proteins involves the formation of an isopeptide bond between the C-terminal glycine residue of ubiquitin and a lysine residue in the target protein. This process of conjugation, referred to as ubiquitination or ubiquitylation, is a multi-step process that requires three enzymes: a ubiquitin-activating (E1) enzyme, a ubiquitin-conjugating (E2) enzyme, and a ubiquitin ligase (E3). Ubiquitination is classically recognized as a mechanism to target proteins for degradation and as a result, ubiquitin was originally named ATP-dependent Proteolysis Factor 1 (APF-1). In addition to protein degradation, ubiquitination has been shown to mediate a variety of biological processes such as signal transduction, endocytosis, and post-endocytic sorting.

Fluorogenic substrate for deubiquitinating enzymes based on the C-terminal derivative of ubiquitin with rhodamine110 (R110). Similar to other C-terminus derivatives such as Ub-AMC (U-550) and Ub-AFC (U-551), this is an exquisitely sensitive deubiquitinating enzyme substrate and is useful for studying ubiquitin C-terminal hydrolytic activity when detection sensitivity or continuous monitoring of activity at longer wavelengths is essential.

Product Information	
Quantity:	50 µg
MW:	8.9 kDa
Stock:	2.25 mg/ml (250 µM) in DMSO
Purity:	> 95%
Activity:	UCH-L3 K_m = 0.034 µM, $USP2_{CD}$ K_m = 1.5 µM.

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Use & Storage	
Use:	Recombinant Human Ubiquitin-Rhodamine110 (R110) is ideal for use in assays requiring fluorescent detection. Optimal fluorescence at pH 8.0 is monitored with an excitation wavelength of 485 nm and an emission wavelength of 535 nm. Reaction conditions will need to be optimized for each specific application. We recommend an initial Ubiquitin-R110 concentration of 0.1-1 μM.
Storage:	Store at -80°C. Avoid multiple freeze/ thaw cycles. Protect from light.

Literature

References:

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